



Project Number: Retention and Torque Force Test Report	Tracking Code: 1527157_Report_Rev_1
Requested by: Roy Luo	Date: 4/20/2018
Part #: JSO-1215-01	
Part description: JSO	Tech: Kason He
Test Start: 4/12/2018	Test Completed: 4/16/2018



RETENTION AND TORQUE FORCE TEST REPORT

JSO

JSO-1215-01

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REVISION HISTORY

DATA	REV.NUM.	DESCRIPTION	ENG
4/20/2018	1	Initial Issue	KH

CERTIFICATION

All instruments and measuring equipment were calibrated to National Institute for Standards and Technology (NIST) traceable standards according to ISO 10012-1 and ANSI/NCSL 2540-1, as applicable.

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SCOPE

To perform the following tests: Retention force and Torque test. Please see test plan.

APPLICABLE DOCUMENTS

Standards: EIA Publication 364

TEST SAMPLES AND PREPARATION

- 1) All materials were manufactured in accordance with the applicable product specification.
- 2) All test samples were identified and encoded to maintain traceability throughout the test sequences.
- 3) Either an automated cleaning procedure or an ultrasonic cleaning procedure may be used.
- 4) The automated procedure is used with aqueous compatible soldering materials.
- 5) Any additional preparation will be noted in the individual test sequences.

FLOWCHARTS

Pull Out Force

Note: Pull out force will be tested using three separate PCB options, the differences being the diameter of the holes for the JSO assemblies.

<u>Group 1</u> JSO-1215-01 PCB BOARD		<u>Group 2</u> JSO-1215-01 PCB BOARD		<u>Group 3</u> JSO-1215-01 PCB BOARD	
6.35mm Diameter PCB		6.22mm Diameter PCB		6.48mm Diameter PCB	
Step	Description	Step	Description	Step	Description
1.	Pull Out Force <i>Note: Tesing was performed using SK-PCB-TEST-01 which is a .062 thick PCB with 0.250 inch diameter holes.</i>	1.	Pull Out Force <i>Note: Tesing was performed using SK-PCB-TEST-19 which is a .062 thick PCB with 0.239 inch diameter holes.</i>	1.	Pull Out Force <i>Note: Tesing was performed using SK-PCB-TEST-20 which is a .062 thick PCB with 0.251 inch diameter holes.</i>

Torque

Note: Torque will be tested using three separate PCB options, the differences being the diameter of the holes for the JSO assemblies.

<u>Group 1</u> JSO-1215-01 PCB BOARD		<u>Group 2</u> JSO-1215-01 PCB BOARD		<u>Group 3</u> JSO-1215-01 PCB BOARD	
6.35mm Diameter PCB		6.22mm Diameter PCB		6.48mm Diameter PCB	
Step	Description	Step	Description	Step	Description
1.	Torque Force <i>Note: Tesing was performed using SK-PCB-TEST-01 which is a .062 thick PCB with 0.250 inch diameter holes.</i>	1.	Torque Force <i>Note: Tesing was performed using SK-PCB-TEST-01 which is a .062 thick PCB with 0.250 inch diameter holes.</i>	1.	Torque Force <i>Note: Tesing was performed using SK-PCB-TEST-01 which is a .062 thick PCB with 0.250 inch diameter holes.</i>

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ATTRIBUTE DEFINITIONS

The following is a brief, simplified description of attributes.

PULL OUT FORCE:

- 1) Secure connector near center and pull on connector

TORQUE:

- 1) Record the peak forces required to break JSO free.

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RESULTS

Retention force:

HOLE DIA 0.255 inch
 Min -----53.12 lbs
 Max-----59.38 lbs

HOLE DIA 0.250 inch
 Min -----136.48 lbs
 Max-----140.33 lbs

HOLE DIA 0.245 inch
 Min -----155.34 lbs
 Max-----162.53 lbs

Torque force:

HOLE DIA 0.255 inch
 Min -----21.85 in-lbs
 Max-----30.75 in-lbs

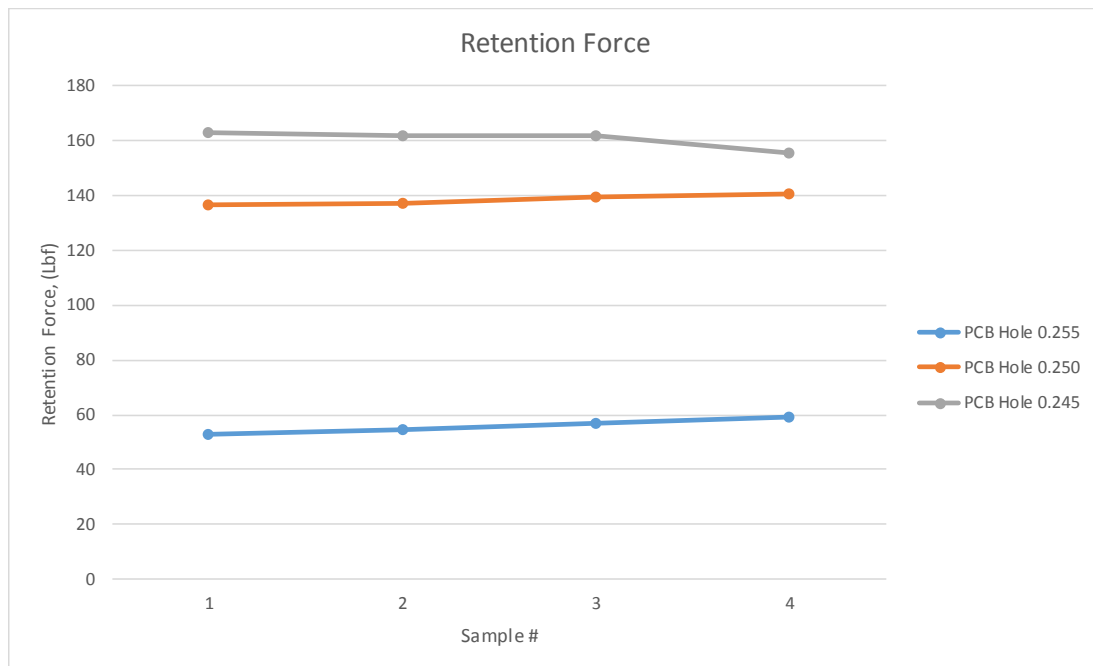
HOLE DIA 0.250 inch
 Min -----60.75 in-lbs
 Max-----74.74 in-lbs

HOLE DIA 0.245 inch
 Min -----78.48 in-lbs
 Max-----83.85 in-lbs

DATA SUMMARIES

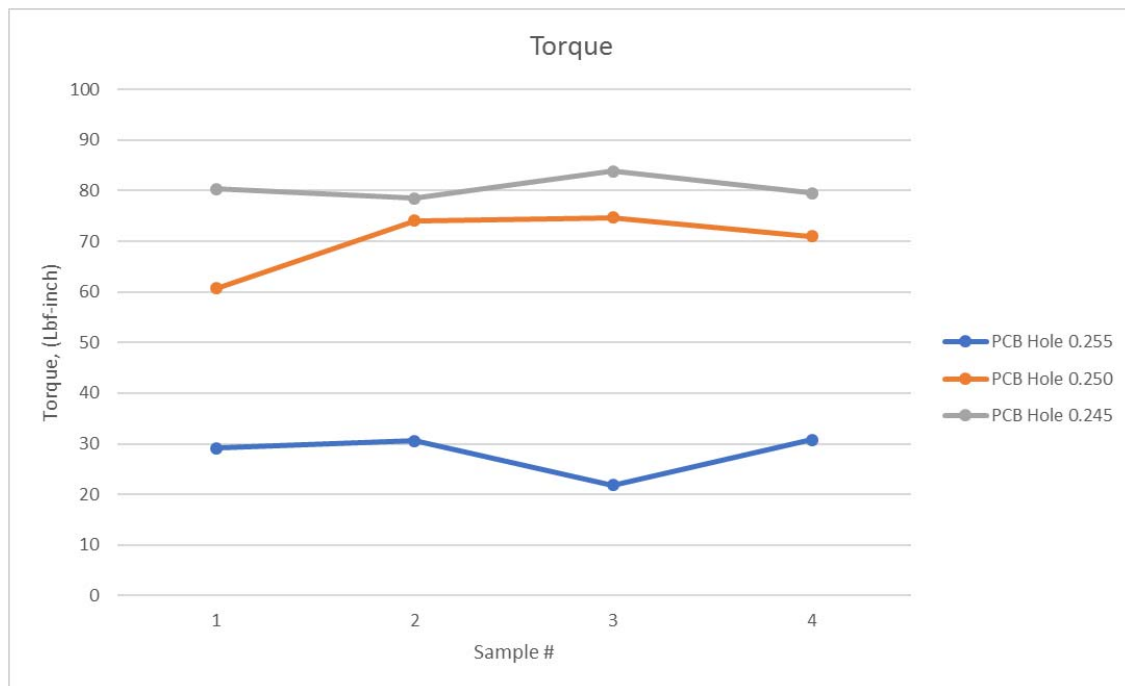
Pull out force and Torque:

Sample #	JSO					
	Retention Force				Unit: Lbf	
	PCB Hole	Force	PCB Hole	Force	PCB Hole	Force
1	0.25627	53.12	0.24952	136.48	0.24548	162.53
2	0.25617	54.6	0.2498	137.17	0.24525	161.93
3	0.25617	56.65	0.24975	139.06	0.24531	161.74
4	0.25597	59.38	0.24987	140.33	0.24541	155.34
Min	0.25597	53.12	0.24952	136.48	0.24525	155.34
Max	0.25627	59.38	0.24987	140.33	0.24548	162.53
Average	0.25615	55.94	0.24974	138.26	0.24536	160.39



DATA SUMMARIES

Sample #	JSO					
	Torque Testing				Unit: Lbf-inch	
	PCB Hole	Torque	PCB Hole	Torque	PCB Hole	Torque
1	0.25619	29.15	0.2498	60.75	0.24541	80.40
2	0.25592	30.55	0.24926	74.12	0.24503	78.48
3	0.25630	21.85	0.24904	74.74	0.24528	83.85
4	0.25597	30.75	0.24946	70.95	0.24463	79.57
Min	0.25592	21.85	0.24904	60.75	0.24463	78.48
Max	0.25630	30.75	0.24980	74.74	0.24541	83.85
Average	0.25610	28.08	0.24939	70.14	0.24509	80.58



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EQUIPMENT AND CALIBRATION SCHEDULES

Equipment #: TCT-04

Description: Dillon Quantrol TC2 Test Stand

Manufacturer: Dillon Quantrol

Model: TC2

Serial #: 04-1041-04

Accuracy: Speed Accuracy: +/- 5% of indicated speed; Displacement: +/- 5 micrometers.

... Last Cal: 05/21/2017, Next Cal: 05/21/2018